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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,386	12/21/2001	Richard Y. Chen	US 010700	4894

24737 7590 02/23/2007

PHILIPS INTELLECTUAL PROPERTY & STANDARDS

P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

WONG, ALLEN C

ART UNIT	PAPER NUMBER
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2621

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
2 MONTHS	02/23/2007	PAPER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/028,386
Filing Date: December 21, 2001
Appellant(s): CHEN ET AL.

Robert M. McDermott
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11/21/06 appealing from the Office action mailed 7/3/06.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

Claims 8 and 18 are rejected under 35 U.S.C. 101.

Claims 1, 4-8, 11-13, 15-19 and 21-25 are rejected under 35 U.S.C. 103 (a),
where:

Claims 1, 4-8, 11 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (6,614,936) in view of Mishima (5,488,418), and

Claims 12, 13, 15-19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Bonet (6,510,177) in view of Strongin (5,872,866).

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,510,177	DE BONET ET AL	1-2003
6,614,936	WU ET AL	9-2003
5,872,866	STRONGIN ET AL	2-1999
5,488,418	MISHIMA ET AL	1-1996

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 8 and 18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 8 and 18 are written in such a manner that a computer program product can be reasonably interpreted as containing instructions to be listed as computer program coded language written on a piece of paper. Because of the ambiguous nature of the claims as currently written in the preamble of claims 8 and 18, claims 8 and 18 need to be produced in a tangible body, machine readable, and be non-function descriptive material, meaning that a compressed signal needs to be produced by a method, apparatus, arrangement or system. So claims 8 and 18 need to be cancelled to overcome the 35 U.S.C. 101

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rejection. The preamble needs to disclose "a computer-readable storage medium (media) storing computer program including executable instructions, the computer executes instructions comprising:". The term "product" should be removed. See MPEP 706.03(a).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4-8, 11 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (6,614,936) in view of Mishima (5,488,418).

Regarding claims 1, 8 and 11, Wu discloses a computer storage medium storing computer program including executable instructions for encoding a layered video signal, the program product comprising:

means for receiving a video signal and outputting an encoded base layer stream (fig.9, element 82); and

means for encoding an enhancement layer (fig.9, element 84).

Although Wu does not specifically disclose wherein the enhancement layer encoding means includes a plurality of discrete cosine transform (DCT) modules and selection means for selecting a DCT module of the plurality of DCT modules for performing a DCT computation, however, Mishima teaches the use of a plurality of discrete cosine transform (DCT) modules and selection means for selecting one of the

DCT modules (fig.50B, Mishima discloses the use of multiple DCT modules 77 with a selection means 79 for selecting one of the appropriate DCT module from the plurality of DCT modules). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Mishima's multiple DCT modules and selection means into Wu's enhancement layer coder for producing the enhancement layer encoding means includes a plurality of discrete cosine transform (DCT) modules and selection means for selecting one of the DCT modules so as to accurately, efficiently encode and decode image data with as few errors as possible during transmission while maintaining high image quality (Mishima col.6, ln.7-19).

Wu does not specifically disclose wherein each of the plurality of DCT modules comprises a different precision. However, Mishima teaches the use of a plurality of discrete cosine transform (DCT) modules and selection means for selecting one of the DCT modules (fig.50B, Mishima discloses the use of multiple DCT modules 77 with a selection means 79 for selecting only one of the appropriate DCT module from the plurality of DCT modules, wherein each DCT 77 comprises its own precision).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Mishima's multiple DCT modules and selection means into Wu's enhancement layer coder for producing the enhancement layer encoding means includes a plurality of discrete cosine transform (DCT) modules and selection means for selecting one of the DCT modules so as to accurately, efficiently encode and decode image data with as few errors as possible during transmission while maintaining high image quality (Mishima col.6, ln.7-19).

Regarding claims 4-7 and 22-25, Wu does not specifically disclose wherein the selection means selects one of the DCT modules based on one of the group consisting of: an available level of computing resources; an encoding bit rate; a required quality level; a decoder capability; and bandwidth availability. However, Mishima teaches wherein the selection means selects one of the DCT modules based on one of the group consisting of: an available level of computing resources (col.24, ln.23-33); an encoding bit rate (col.24, ln.23-33); a required quality level (col.24, ln.23-33); a decoder capability (col.24, ln.23-33); and bandwidth availability (col.24, ln.23-33). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Mishima's multiple DCT modules and selection means into Wu's enhancement layer coder for producing the enhancement layer encoding means includes a plurality of discrete cosine transform (DCT) modules and selection means for selecting one of the DCT modules so as to accurately, efficiently encode and decode image data with as few errors as possible during transmission while maintaining high image quality (Mishima col.6, ln.7-19).

3. Claims 12, 13, 15-19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Bonet (6,510,177) in view of Strongin (5,872,866).

Regarding claims 12, 18 and 21, De Bonet discloses a program product stored on a recordable medium for decoding a layered video stream, comprising:

means for receiving and decoding a base layer video stream (fig.2, element 270);
and

means for receiving an enhancement layer video stream and generating a decoded enhanced video output (fig.2, element 280 is the enhancement layer decoder and note the enhanced video output is displayed on monitor 290).

Although De Bonet does not specifically disclose wherein the enhancement layer decoding means or means for receiving an enhancement layer video stream including: a plurality of inverse discrete cosine transform (IDCT) modules; and means for selecting one of the IDCT modules. However, Strongin teaches the use of a plurality of inverse discrete cosine transform (IDCT) modules; and means for selecting one of the IDCT modules (fig.6, elements 650-653 are the plural IDCT modules and element 640 is the selection means for selecting one of the IDCT modules). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Strongin's plural IDCT modules and selection means into De Bonet's enhancement layer decoder module for producing means for receiving an enhancement layer video stream including: a plurality of inverse discrete cosine transform (IDCT) modules; and means for selecting one of the IDCT modules so as to reduce the computational burden of the video decoding by selecting a highly efficient inverse discrete cosine transform which is optimized for particular picture characteristics (Strongin col.4, ln.1-5).

Regarding claims 13 and 19, De Bonet does not specifically disclose wherein each of the plurality of IDCT modules comprises a different precision. However, Strongin teaches wherein each of the plurality of IDCT modules comprises a different precision (col.13, ln.33-39; note selection circuit 640 selects the optimum IDCT unit

based on the precision that each IDCT has). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Strongin's plural IDCT modules and selection means into De Bonet's enhancement layer decoder module for producing means for receiving an enhancement layer video stream including: a plurality of inverse discrete cosine transform (IDCT) modules; and means for selecting one of the IDCT modules so as to reduce the computational burden of the video decoding by selecting a highly efficient inverse discrete cosine transform which is optimized for particular picture characteristics (Strongin col.4, ln.1-5).

Regarding claims 15-17, De Bonet does not specifically disclose wherein the selection means selects one of the IDCT modules based on one of the group consisting of: an available level of computing resources; an encoding bit rate; and a required quality level; a decoder capability; and bandwidth availability. However, Strongin teaches the selection means selects one of the IDCT modules based on one of the group consisting of: an available level of computing resources (col.13, ln.33-39); an encoding bit rate (col.13, ln.33-39); and a required quality level (col.13, ln.33-39); a decoder capability (col.13, ln.33-39); and bandwidth availability (col.13, ln.33-65; note selection circuit 640 selects the optimum IDCT unit based on the precision that each IDCT has, in that the bandwidth, quality level, computing resources, encoding bit rate and decoder capacity are taken into account before the IDCT selection circuit 640 chooses the optimum IDCT module for preparation of decoding image data for viewing). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Strongin's plural IDCT modules and selection means into De

Bonet's enhancement layer decoder module for producing means for receiving an enhancement layer video stream including: a plurality of inverse discrete cosine transform (IDCT) modules; and means for selecting one of the IDCT modules so as to reduce the computational burden of the video decoding by selecting a highly efficient inverse discrete cosine transform which is optimized for particular picture characteristics (Strongin col.4, ln.1-5).

(10) Response to Argument

Regarding page 7 of appellant's arguments about claims 8 and 18, appellant asserts that the rejection to claims 8 and 18 under 35 U.S.C. 101 as improper. The examiner respectfully disagrees. Claims **8 and 18** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims **8 and 18** define a **"computer-readable storage medium storing computer program product..."** embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently **"a computer-readable storage medium storing computer program product..."** can range from paper on which the program is written, to a program simply

contemplated and memorized by a person. Also, perusal of MPEP 706.03(a) supports the rejection of claims 8 and 18.

Claims 1, 4-7 and 22-23

Regarding lines 9-13 on page 8 of appellant's arguments, appellant states that neither Wu nor Mishima teaches or suggests applying a DCT transform in the encoding of the enhancement layer. The examiner respectfully disagrees. First of all, the claims do not even mention state anything about applying a DCT transform in the enhancement layer encoder. The injection of this statement into the claims is not considered valid since the examiner addresses only what is broadly claimed. However, in Wu's figure 9, one can see that the data is DCT transformed in the enhancement layer encoder 84, then the data is sent to element 222, element 224, element 226(n-1), and then to the adder and element 216(n-1) for performing inverse DCT transform process for inversely DCT transforming data previously DCT transformed, and then going to element 218(n-1) and element 202, element 204 and element 208, and repeating the process in a cyclical manner for repeating DCT transforming of data in enhancement layer encoder.

Wu does not specifically disclose wherein the enhancement layer encoding means includes a plurality of discrete cosine transform (DCT) modules and selection means for selecting a DCT module of the plurality of DCT modules for performing a DCT computation. However, in figure 50B, Mishima discloses the use of multiple DCT modules 77 with a selection means 79 for selecting one of the appropriate DCT module from the plurality of DCT modules. Thus, Mishima suggests the use of a plurality of

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discrete cosine transform (DCT) modules and selection means for selecting one of the DCT modules. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Mishima's multiple DCT modules and selection means into Wu's enhancement layer coder for producing the enhancement layer encoding means includes a plurality of discrete cosine transform (DCT) modules and selection means for selecting one of the DCT modules so as to accurately, efficiently encode and decode image data with as few errors as possible during transmission while maintaining high image quality, as suggested in Mishima's column 6, lines 7-19.

Regarding lines 1-2, lines 6-8 and lines 11-14 on page 9 of appellant's arguments, and from line 23 on page 9 to line 2 on page 10 of appellant's arguments, appellant asserts that there is no suggestion or motivation to combine Wu and Mishima. The examiner respectfully disagrees. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to combine the teachings of Mishima's multiple DCT modules and selection means into Wu's enhancement layer coder for producing the enhancement layer encoding means includes a plurality of discrete cosine transform (DCT) modules and selection means for

selecting one of the DCT modules so as to accurately, efficiently encode and decode image data with as few errors as possible during transmission while maintaining high image quality, as suggested in Mishima's column 6, lines 7-19.

Claims 8 and 24-25

Regarding the first two paragraphs on page 10 of appellant's arguments, appellant argues that there is no suggestion or motivation to combine the teachings of Wu in view of Mishima. The examiner respectfully disagrees. As previously stated above, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to combine the teachings of Mishima's multiple DCT modules and selection means into Wu's enhancement layer coder for producing the enhancement layer encoding means includes a plurality of discrete cosine transform (DCT) modules and selection means for selecting one of the DCT modules so as to accurately, efficiently encode and decode image data with as few errors as possible during transmission while maintaining high image quality, as suggested in Mishima's column 6, lines 7-19.

Claim 11

Regarding the last two paragraphs on page 10 of appellant's arguments, appellant argues that there is no suggestion or motivation to combine the teachings of Wu in view of Mishima. The examiner respectfully disagrees. As previously stated above, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to combine the teachings of Mishima's multiple DCT modules and selection means into Wu's enhancement layer coder for producing the enhancement layer encoding means includes a plurality of discrete cosine transform (DCT) modules and selection means for selecting one of the DCT modules so as to accurately, efficiently encode and decode image data with as few errors as possible during transmission while maintaining high image quality, as suggested in Mishima's column 6, lines 7-19.

Claims 12-13, 15-19 and 21

Regarding lines 12-18 on page 11, lines 11-17 and 18-23 on page 12 of appellant's arguments, applicant asserts that there is no motivation or suggestion to combine the teachings of De Bonet and Strongin together as a whole. The examiner respectfully disagrees. In figure 2, De Bonet teaches the decoding of a base layer at

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element 270, the decoding of an enhancement layer 280, and the generation of the decoded enhanced video output at element 290 for viewing. De Bonet does not specifically disclose wherein the enhancement layer decoding means or means for receiving an enhancement layer video stream including: a plurality of inverse discrete cosine transform (IDCT) modules; and means for selecting one of the IDCT modules. However, Strongin's figure 6 discloses that elements 650-653 are the plural IDCT modules and element 640 is the selection means for selecting one of the IDCT modules. Thus, Strongin teaches the use of a plurality of inverse discrete cosine transform (IDCT) modules; and means for selecting one of the IDCT modules.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to combine the teachings of Strongin's plural IDCT modules and selection means into De Bonet's enhancement layer decoder module for producing means for receiving an enhancement layer video stream including: a plurality of inverse discrete cosine transform (IDCT) modules; and means for selecting one of the IDCT modules so as to reduce the computational burden of the video decoding by selecting a highly efficient inverse discrete cosine transform which is

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optimized for particular picture characteristics, as suggested in Strongin's column 4, lines 1-5.

Both De Bonet and Strongin pertain to the same, analogous MPEG video encoding environment, and thus, the combination of De Bonet and Strongin is deemed to be reasonable and useable together as a whole.

In conclusion, all of the broad limitations of the claims have been met, and therefore, maintenance of the rejection is respectfully requested.

(11) Evidence Appendix

No evidence has been submitted that is relied upon by the appellant in this appeal.

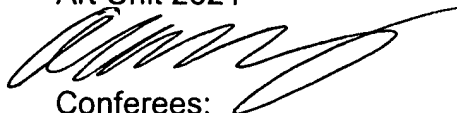
(12) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

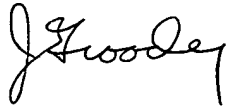
Respectfully submitted,

Allen Wong
Primary Examiner
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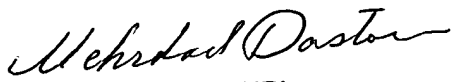

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